ERA speaking points for December 13, 2005 meeting with LWG

The process

In September, the Eco Risk Assessors for EPA and its partners began meeting in focused work sessions that continued through November. During these sessions, the team discussed the planning, sampling and analysis that had been done to date for the ERA, and came to consensus on additional needs. You have our products in hand now. They are:

(1) a management goal and objectives to guide the ERA,
(2) a revised ecological conceptual site model,
(3) changes to proposed food web structures,
(4) changes to the Assessment Endpoint Table,
(5) direction on the ERA approach, and
(6) a table containing high priority data needs to be filled during Round 3.

I served as facilitator for the team, and I'm now going to walk us through the products that the team developed to give you and opportunity to ask clarifying questions. My guess is that most of your questions probably relate to the data needs table (Table 7), and maybe our direction on the ERA approach (pages 16- 22 of the data gaps memo), but I'd like to check in with you on that.

- Would you like me to briefly walk through each of the main pieces of our direction on the ERA to allow clarifying questions on each, or would you like to jump to the data needs table or another piece?

…. Okay. As facilitator of the process, I'm probably going to ask individual members of the EPA/partners Eco Risk Assessment team to respond to technical questions. And again, I want to remind us all that we're not here to hash out sampling plans or resolve any major areas of uncertainty. Our purpose is to provide any clarification that may be needed to help you understand what we're asking for, even if it's at a fairly high level at this point, and not to get into the details. We can, however, discuss and agree on paths forward to resolve areas of uncertainty, whether they be through cooperative meetings together, or through the development of additional, more specific direction from EPA and partners to guide future work.

- Sound good?

Management Goal and Objectives

Our team felt that management objectives were needed to guide the ERA and explain in clear terms *why* we were cleaning up the Harbor from an ecological perspective and *what* we were trying to accomplish.

The goal and objectives we developed also provide clear direction for the sampling work we need to do, and they give us a sense of what's most important to focus on and what level of uncertainty we should accept in different areas of the ERA.

The goal and objectives also provide high level rationale and justification for the studies needed to fill data gaps, and we expect them to be incorporated in all future tech memos and working documents that relate to the ERA (including the PRE, the Baseline ERA, and the Comprehensive ERA)

- Questions?

A Revised Ecological Conceptual Site Model

Our team reviewed the preliminary Ecological CSM that was proposed in the April 2004Programmatic Work Plan, and we made a number of significant changes to reflect the management goal and objectives, and to better guide the FWM, the dietary model and the overall ERA approach.

For the "source side" (the left side) of the CSM, we added more detail to better represent the complexity of the physical system, and made changes to incorporate a wider range of potential contaminant-receptor interactions. Major changes made:

- Primary, secondary and tertiary sources and release mechanisms were added
- Air, Riparian Soil, Seeps, and Transition Zone Water were added as exposure media
- Willamette River Surface Water, Willamette River Sediment, and Riparian Soil were defined
- 'biota" was changed from an Exposure Media to and Exposure Route, as captured by the "dietary" component to incorporate trophic transfer

On the "receptor side" (the right side) of the CSM:

- We added three other plant categories: phytoplankton, periphyton, and terrestrial plants. Phytoplankton and periphyton were added because they will be assessed as potential contaminant pathways in the food web and dietary models, and terrestrial plants were added for completeness in the ecological system (upland responsible parties are responsible for assessing risk to these species).
- For invertebrates, zooplankton was added and shellfish were specified under macrofauna because these species will be assessed as potential contaminant pathways in the food web and dietary models.
- For fish, adult Chinook salmon and adult Pacific Lamprey were added because the adults represent distinct, significant receptor-exposure scenarios that were not addressed in the juvenile life stages.

We also redefined pathway significance determinations and some changes were made regarding the completeness and significance of these pathways.

- Questions?

Measures of Exposure and Effect

We reviewed the Assessment Endpoint Table that was included in the Programmatic Work Plan, and proposed changes as shown in Table 6 of the data gaps memo. The left three columns of that table show information from the Assessment Endpoint Table provided in the Programmatic Work Plan, and the right three columns describe necessary changes to the table and provide comments from EPA and partners, including justification and data needs.

[[The data need numbers listed in the table correlate to the data needs identified in the Data Needs Table (Table 7).]]

- Questions?

Food Web Model Approach (Note: Bruce may have covered much of this already)

The team reviewed the preliminary Fish and Wildlife Food Web Models proposed by the LWG in the Programmatic Work Plan (Figures 5-4 and 5-5), and agreed on a number of relatively minor changes. Generally, we noted that these models are sufficient as general guidance to represent the food web in Portland Harbor, but they probably don't provide adequate detail for the Food Web Model and the Dietary Approach.

[[Changes to the Fish Food Web Model (Figure 5-4):

- Box shading: all boxes should be shaded, except the "Surface water, sediment, and porewater (transition zone)" box, the "Primary producers" box, and the "Zooplankton and drift organisms" box. Add a footnote to the "Primary producers" box and the "Zooplankton and drift organisms" box that states: "These receptors will be assessed as potential pathways for contaminant migration through the food web. They will not be assessed as endpoints themselves."
- Add an arrow from "Detritivorous fish" to "Omnivorous/herbivorous fish," to represent sturgeon consuming detritivorous fish.
- Add an arrow from Epibenthic invertebrates to Piscivorous fish to represent bass and pikeminnow eating crayfish.
- Add arrows from "Zooplankton and drift organisms" to both "Infaunal invertebrates" and "Epibenthic Invertebrates."
- Add a footnote to Epibenthic invertebrates that states "For crayfish, consider scavenging at higher trophic levels."
- Add a footnote to sculpin in the Invertivorous fish category that states "For sculpin, consider feeding within the same trophic level."]]

[[Changes to the Wildlife Food Web Model (Figure 5-5):

- Add arrows from "Zooplankton and drift organisms" to both "Infaunal invertebrates" and "Epibenthic Invertebrates."
- Add an arrow from "Reptiles" to "Amphibians."]]

In addition, we'd like to have a "real-life" visual, colorful image of the food web to use as a communication tool for public audiences and interested stakeholders. The visual image would include an illustration or photograph of a cross section of the river, and show habitat areas and

representative species of the benthic and epibenthic communities, native resident and anadromous fish, and key wildlife receptors.

- Questions?

Risk Assessment Approach

We discussed and agreed on a number of refinements to the ERA approach. Our changes focus on the approaches required to assess certain types of chemicals, like PAHs and metals, and certain receptors, like sturgeon, Chinook salmon and lamprey.

- Rather than walking through each part of what you have from us, I'll just ask if you have any questions about any aspects of it.

Data Gaps

Our team then identified a number of high priority data needs that are necessary to complete the ERA, and this is based on reviewing the data collected to date and our direction on the ERA approach. The data needs are provided in Table 7, along with justification for each need identified, information on how the data will be used, and guidance on how to fill each data need.

In addition to the data needs identified here, EPA and partners intend to provide direction on the approach for assessing lamprey and associated lamprey data needs within the next month. This will come in a supplemental data gaps memorandum in January. In addition, we are in the process of evaluating the LWG's proposed FWM, and it's likely that we'll identify additional data needs associated with the model.

- Again, rather than walking through each part of the data needs table, please let us know what questions you have about it and we'll provide clarifying information.